

The effect of agricultural credit in subsidies and extension on animal sector sustainability: a case of Western Iran

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Abstract

Providing finance for farmers dealing with animal is considered as main concept in agricultural market. The aim of this paper was to identify the impact of agricultural credit, subsidy and extension in animal sector sustainability in western part of Iran. The data was collected from 119 farmers through pre-tested structured questionnaire. Twenty one percent of respondents had taken credit and 72% of farmers had received subsidies to develop their animal production capacity. In this study, around 97% of farmers who had linked with extension facility and 45% of them had participated for several trainings which were conducted by different institutions. Further, positive relationship also existed between productivity of the animal herd and farmers' education, milk yield, gross income and number of milking cows. It was observed that milk yield had correlation with received credit amount and value of received subsidy by farmers. The results clearly illustrated credit and subsidy in animal sector could considerably facilitate to alleviate poverty in rural areas because credit not only helps to increase the income from the each milking animal but also assists to expand sustainability of livestock sector.

Keywords: Agricultural credit, Extension, Subsidy, Animal Sector

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Introduction

Animal sector plays a significant role in supplementing the family income of thousands of rural households and acts as an insurance against the notions for the poor ones. It is clear that the livelihood of many poor people is dependent on animal farming. Given its importance to national economy, almost all governments gave high priority to raise agricultural productivity and hence farmer's income. Credit is one of the tools of production, and proper use can build earning capacity. Animal industry is dominated by smallholders. Smallholders are known to be resource poor and, operate below their potentials (Nyikal, 2007). Therefore, these resource poor people need agricultural credit for purchase of quality animals, feed, fodder, medicines and others (Das, 2009). Credit may provide them opportunity to earn more money and improve

their standard of living (Vogt, 1978). The use of credit, envisaged as a means of promoting technology transfer and the use of recommended farm inputs, and key to agricultural development (GoK, 2002). The role of extension in creating conducive to growth and economic development in animal cattle is largely acknowledgeable. Rath et al. (2009) pointed out that impotency of extension to overcome the constraints of various management practices in animal sector. Sustainable development is the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner to ensure the attainment and continued satisfaction of human needs for the present and future generations.

The potential growth of livestock sector is highest and more reliable compared to crop sector, indicating that livestock sector can play more effective and vital

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role to mitigate poverty in rural areas than crop sector. Therefore this study conducted with the aim of identifies the impact of agricultural credit and extension on animal sector sustainability in Iran.

Materials and Methods

The study was carried out in Western region in Iran during the send and third quarter of year 2010. Purposive sampling approach was adopted to collect the data for the study. The sample consisted of the farmers who engage in animal farming for their livelihood. The data was collected from 119 farmers about their social economic information, milk production, number of animals and credit or subsidy or extension received in 2010 using a pre-tested structured questionnaire. In respect to credit, credit amount, interest rate, number of installment need to be paid and credit source were collected. Type of subsidy, source monitory value and farmers' satisfaction were gathered regarding the subsidy obtained by the farmers. Extension institute, type's information, number of contact per month, farmers' perception and willingness to pay for the extension activities were empirically measured in term of the impact of extension on animal farming. Data were analyzed by using parametric statistical tools such as t test, Pearson correlation test and regression model and nonparametric tool (Kendall's tau-b correlation test). Regression model was developed to quantify the impact of credit, subsidy and extension on milk yield.

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

\hat{Y} = milk yield, β_0 = constant, X_1 = credit, X_2 = subsidy, X_3 = extension and ϵ = error term

Results and Discussion

Sustainable can be used in the meaning of animal husbandry in the sense to relate with concepts of continuity and equity in the production of animal over long period of time and strongly related to the long term economic sustainability. This requires an excellent condition of the farmers where in reflected by the characteristic of farmers themselves. The sample comprised of farmers having mean age around 46.25. Large fractions of respondents (60 %) were having more than secondary education. Around 48 % reported that ownership of herd was less than four while and 83.5 % farmers reported they maintained less than four milking cows out of the total herd (Table 1). Studied sample reported 8.13 L average milk yield per day and 3.25 L average milk productivity per cow per day. It was significantly higher than the country productivity (1.8 L per cow per day) (Department of Animal Production and Health, 2008). About 24 % of the respondents had personal monthly income in the range

between IRR 1184000 and IRR 1776000 and had IRR 16, 74294 as mean income (Table 2). They have done animal as part time work. Farm families earned IRR 7 861.00 as average income from their milk apart other household income. In studied sample, majority of farmers (62 %) sell their milk as raw while 24 % prefer value added product to sale. Rests of them use their product for home consumption. Farmers were earning more income through value added products rather selling raw milk.

Table 1: Farmers distribution regarding total herd and milking cow

Categories	Regarding total herd	Regarding milking cows
Less than 4 animals	57 (48%)	99 (83.5%)
5 – 9 animals	25 (21%)	11 (9%)
10 – 14 animals	16 (13%)	6 (5%)
15 – 19 animals	13 (11%)	0
20< animals	8 (7%)	3 (2.5%)

Table 2: Income distribution among farmers

Income level (Monthly IRR)*	Household Income	Monthly Income from milk
Less 4 999.00	31(26%)	58 (49%)
5 000.00-9 999.00	11(9%)	29 (24%)
10 000.00-14 999.00	29(24%)	15 (13%)
15 000.00-19 999.00	21(18%)	4 (3%)
Higher 20 000.00	27(23%)	13 (11%)

* 1 US \$ = 13500 IRR

The credit facilities for the livestock sector emanated from state owned commercial banks, all private domestic commercial banks or development banks. Twenty one percent of respondents had taken credit from those banks to develop their animal production capacity. As average studied sample had received IRR 124 875.00 amount mean credit for their animal activities. In studied sample 72 % of farmers had received subsidies and average value of received subsidy was IRR. 35 765.00 for to improve their animal farming operation. In this surveyed sample 97 % of farmers who had linked with extension facility and 45 % of them had participated for several trainings which was conducted by different institutions.

Results of regression analysis proved that credit and subsidy significantly increase milk production while extension was not significant. The model was shown following equation for milk yield.

$$\text{Milk yield} = 7.19 + 0.05 X_1 - 1.17 X_2 \quad (R^2 = 0.650)$$

Further positive relationship also existed between productivity of the animal herd and farmers education ($r=.211$, $p=.032$), milk yield ($r=.379$, $p=.000$) gross income ($r=.431$, $p=.000$) and number of milking cows ($r=.312$, $p=.001$). And also income positively correlated with milking cows in the animal herd ($r=.663$, $p=.000$), milk yield ($r=.943$, $p=.000$), productivity of the animal herd ($r=.338$, $p=.000$), selling milk amount ($r=.918$, $p=$

Table 3: Areas of extension received by farmers' for different activities in animal farm

Activities	Housing	Forage management	Feeding	Diseases	AI Activities	Clean milk production
Regular	43 (36%)	46 (39%)	36 (30%)	93 (78%)	86 (72%)	45 (38%)
Occasion	35(29%)	28 (23%)	33 (28%)	16 (12%)	23 (19%)	27 (23%)
Never	41 (35%)	45 (38%)	50 (42%)	0 (0%)	10 (8%)	39%)

.000), price received for 1 L of milk ($r=.211$, $p=.040$) and extension service and training received by farmers ($r=.311$, $p=.002$). It was observed that milk yield had correlation with credit amount which received by farmers ($r=.500$, $p=.018$), value of subsidy received ($r=.350$, $p=.003$) and extension service and training received by farmers ($r=.453$, $p=.000$). Further, amount of credit was correlated with the level of education received by farmers ($r = 0.62$, $p= 0.000$) and herd size ($r = 0.56$, $p= 0.02$). The farmers with higher level knowledge on management practices were acquiring and demanding large amount of credit compared to farmers with low knowledge. The herd size was another important variable which had strong positive correlation with the amount of credit obtained from different institutions. The possible reason is that large farmers can afford to take bigger amount of credit because they have relatively large number of animals and their profit to put in the bank as collateral. Contact with extension agencies and level of adoption of animal husbandry practices were significantly contributed to get high income from milk price and deciding the selling type of milk. Hence, extension education is critical to improve the resource use efficiency of livestock sector in the long run.

Regression analysis was further used to identify the how other variables influence on milk production. Out of the seven variables, number of milking cows (X_3) and productivity (X_4) were significant while age, education, farmers, satisfaction, family education and information seeking behavior were not significant. The model was shown as follows,
Milk yield = $0.61 + 1.37X_3 - 1.95 X_4$ ($R^2 = 0.733$)

Findings of extension source for the purpose of exchanging of information are illustrated in Table 03. These findings are in accordance with the findings of Rathore et al. (2009), Chaudhary and Intodia (2000). In reality, extension services are continually important to educated farmers, and research and learning that accompanies adoption of new technologies is especially important for the advancement of farmers with low knowledge levels (Rivera et al., 1991). Umali et al. (1994) emphasized the ability of the livestock sector to attain its full productive potential is influenced by the availability and quality of livestock support services.

Conclusions

The results clearly illustrated credit and subsidy supply in animal sector could considerably facilitate to alleviate poverty in rural areas because credit not only

helps to increase the income from the each milking animal but also assists to expand sustainability of livestock sector. Extension needs to transfer the animal technology to farmer. It can contribute substantially to farmer's income. Briefly, it will help to guide the policy agents for the formulation of future credit and extension policy in animal sector.

References

- Chaudhary, M. and Intodia, S.L. 2000, Constraints perceived by cattle owners in adoption of modern cattle management practices. *Indian Journal of Animal Research*, 34 (2): 116 – 119.
- Das, B.C. 2009. Estimation of Micro-credit Demand for Animal Farming, *Financing Agriculture- A National Journal of Agriculture & Rural Development*, 2009, Pp: 3-5.
- Department of Animal Production and Health, 2008. Annual report Average Milk Production per Cow/day (Liter) by Province and District.
- GoK, 2002, National Development Plan 2002-2008, Effective Management for Sustainable Economic Growth and Poverty Reduction. Government Printer, Nairobi.
- Nyikal, R.A. 2007. Financing smallholder agricultural production in Kenya: production for the market as a gauge of effective demand for credit, AAAE Conference Proceedings, 193-197.
- Rabbani, M.S., Alam, M.M., Ali, M. Y., Rahman, S. M. R., and Saha, B.K. 2004. Participation of rural people in animal enterprise in a selected area of Bangladesh. *Pakistan J of Nutrition*, 3 (1): 29-34.
- Rathore, R.S., Singh, R. and Kachwaha R.N. 2009. Constraints in Adoption of recommended animal cattle management practices. *Indian Journal of Animal Science*, 62(5): 403-409.
- Rivera, W.M. and Gustafson, D.F. 1991. Agricultural extension: Worldwide institutional evolution and forces for change. New York, NY: Elsevier Science Publishing Company.
- Umali, D.L., Feder, G. and De Hann, C. 1994. Public and private sector roles in the delivery of livestock sector. Proceedings of the International Symposium: Public and private roles in the provision of agricultural support services, Costa Rica, 129-147.
- Vogt, D. 1978. Broadening to access credit. *Development Digest*, 16: 25-32.